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CENTRAL INTELLIGENCE AGENCY

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SECURITY INFORMATION

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INFORMATION REPORT

REPORT

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COUNTRY USSR (Moscow Oblast)

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SUBJECT Source of Materials Used at Institute 160, Fryazino

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DATE OF INFO.

NO. OF ENCLS. (LISTED BELOW)

PLACE ACQUIRED

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SUPPLEMENT TO REPORT NO.

THIS IS UNEVALUATED INFORMATION

1. The following is a list of materials,

25X1 that the complete chemical supply of the Telefunken Factory at Liegnitz, which was
25X1 called the Liegnitz Ceramic Works during the war, had been shipped to Institute 160 in 1946.

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a. Nickel nitrate was used sparingly, in 1-or 2-gram lots. As late as 1952
25X1 nickel nitrate came from Germany.

25X1 b. Aluminum oxide arrived from several sources. the original labels of
25X1 the American type that was received at the Institute, it did not
25X1 come via the Telefunken Liegnitz plant. RCA supplied either 38-500 or 38-900
25X1 aluminum oxide, Aluminum oxide was also received
25X1 from the Schering Company in Berlin, it was not very good,
25X1 insulation-wise, because of too strong a current between the filament and the
25X1 cathode. the resistance was one megohm, for regular operation (with normal
temperature) and the voltage between the filament and cathode was 125 volts
(indirectly heated).
Testing of this material, which took from one

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to 30 days, was done in another shop.

c. Zirconium was used in the cataphoratic process for anodes. American-made zirconium was received during 1948 by the Coating and Lacquer Laboratory shop. Some of this material was still there departure but it was used sparingly and was obtainable only upon receipt of special permission from Metlin, the director of the Chemical Department. The label on the 800-gram glass bottles contained only the quantity and designation of the material. The Russian zirconium was coarser than the American type and did not work as well. (Occasionally samples of both the American type and the Russian for comparison and the chemical purity of the American type was greater than that of the Soviet type.)

d. Nickel-powder, NI (CO), used for the nickel graphite paste by the Cathode Assembly Laboratory, came from somewhere in the USSR.

e. Graphite powder came from the USSR, It arrived carelessly wrapped in a newspaper. There were two types:

(1) electrographite

(2) graphitized carbon black (Graphitierter=Russ-German name)

f. Electrographite was better to work with than graphitized carbon black. Graphitized carbon black particles were too large to permit a good application. From the summer of 1950 until the 1 kg of electrographite.

g. Thorium powder came from Germany or Hungary and was used for coating. Had it been available in the USSR, the Soviets would have used it rather than zirconium,

h. During 1946, barium nitrate, calcium nitrate, strontium nitrate, sodium carbonate, and ammonium carbonate arrived in glass bottles varying in size from 1 to 5 kg.

There was only one 2-kg bottle of aluminum nitrate at Institute 160.

i. Cerium nitrate was available at the Institute in 500-gram bottles. Only two bottles were used from 1946-52; the material was used in aluminum oxide paste.

j. Ferrous nitrate, cobalt nitrate, copper nitrate, and uranium oxide nitrate $(UO_2)(NO_3)_2$ were also received at the Institute. These four items arrived in German bottles from the Schering and Merck Companies in Germany. Only 1 or 2 grams were dispensed at one time.

k. Copper sulphate came from the Schering Company in Germany, in one-kg bottles. used this material to dry alcohol.

l. Tungsten wires arrived on wooden or plastic spools from somewhere in the USSR. The wire was 8 microns in diameter and was approximately 200-300 meters in length. The description on the label of these spools was in Russian but these spools may have come from Germany. The quality of the tungsten wire was much inferior to that which we used in Germany.

m. Molybdenum sheets, approximately 20 cm x 50 cm x ½ mm thick, were used to make "ships" or trays used in the Sinter process in the Special Heating Laboratory.

n. Tungsten and molybdenum alloys the American "J" and "H" metals) were very scarce

the following materials from the Tungsram Factory, Budapest, Hungary:

a. nickel cathode sleeves.

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b. glass stoppers for chemical bottles, and glass flasks.

c. a great deal of literature from the factory library, including books on vacuum tubes, chemical technical papers, complete collections of technological magazines, and an RCA manual. This literature was written in German and English.

d. a carton containing approximately 100 round cathode sleeves. [redacted] may have been designed for a four-volt commercial radio tube. The carton arrived in early 1949.

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e. a 50 mm spool of tungsten wire which was coated with either barium-strontium or barium-strontium-calcium and which was to be used as a directly heated cathode. It was received in early 1949. This filament was submitted for purposes of comparing the work done in the "Cathode Assembly Laboratory" in Plant No 160 and that done at the Tungsram Factory. The wire was bent into a V shape. The ends were scraped clean and then electrically spot-welded to nickel tubes [redacted]

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25X1 [redacted]